



Sequence Listing

<110> Innogenetics N.V.

<120> Purified hepatitis C virus envelope proteins for diagnostic and therapeutic use.

<130> 2551-69

<140> 09/995,860

<160> 122

<170> PatentIn 3.1

<210> 1

<211> 21

<212> DNA

<213> Hepatitis C virus

<400> 1

ggcatgcaag cttaattaat t

21

<210> 2

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<212> DNA

<213> Hepatitis C virus

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taactgca

68

<210> 3

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<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..639

<220>

<221> mat_peptide

<222> 1..636

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48

ctg acc att cca gct tcc gct tat gag gtg cgc aac gtg tcc ggg atg
 Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Met
 20 25 30

96

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tac cat gtc acg aac gac tgc tcc aac tca agc att gtg tat gag gca      144
Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala
      35                      40                      45

gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag      192
Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu
      50                      55                      60

aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg ctc gca gct      240
Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala
      65                      70                      75                      80

agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac gtc gat ttg      288
Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu
      85                      90                      95

ctc gtt ggg gcg gct gct ctc tgt tcc gct atg tac gtg ggg gat ctc      336
Leu Val Gly Ala Ala Ala Leu Cys Ser Ala Met Tyr Val Gly Asp Leu
      100                      105                      110

tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc tcg cct cgc      384
Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile Ser Pro Arg
      115                      120                      125

cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat ccc ggc cac      432
Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
      130                      135                      140

ata aca ggt cac cgt atg gct tgg gat atg atg atg aac tgg tcg cct      480
Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser Pro
      145                      150                      155                      160

aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca caa gct gtc      528
Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val
      165                      170                      175

gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg ggc ctc gcc      576
Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala
      180                      185                      190

tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg att gtg atg cta      624
Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu
      195                      200                      205

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Leu Phe Ala Leu
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<213> Hepatitis C virus

<400> 4

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 Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala
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 Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu
 50 55 60
 Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala
 65 70 75 80
 Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu
 85 90 95
 Leu Val Gly Ala Ala Ala Leu Cys Ser Ala Met Tyr Val Gly Asp Leu
 100 105 110
 Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile Ser Pro Arg
 115 120 125
 Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
 130 135 140
 Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser Pro
 145 150 155 160
 Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val
 165 170 175
 Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala
 180 185 190
 Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu
 195 200 205
 Leu Phe Ala Leu
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<212> DNA

<213> Hepatitis C virus

<220>

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<222> 1..792

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<222> 1..789

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 gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg 96
 Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30

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gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca      144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
      35              40              45

aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg      192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
      50              55              60

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg      240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
      65              70              75              80

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg      288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
      85              90              95

tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc      336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
      100             105             110

gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg      384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
      115             120             125

ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac      432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
      130             135             140

gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg      480
Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
      145             150             155             160

ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc      528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
      165             170             175

tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat      576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
      180             185             190

ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac      624
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
      195             200             205

tgg tcg cct aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca      672
Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro
      210             215             220

caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg      720
Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala
      225             230             235             240

ggg ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg att      768
Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile
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gtg atg cta ctc ttt gct ccc taatag      795
Val Met Leu Leu Phe Ala Pro
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<210> 6
<211> 263
<212> PRT
<213> Hepatitis C virus

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<400> 6

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 Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30
 Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
 35 40 45
 Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60
 Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80
 Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95
 Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110
 Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125
 Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140
 Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
 145 150 155 160
 Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
 165 170 175
 Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
 180 185 190
 Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205
 Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro
 210 215 220
 Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala
 225 230 235 240
 Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile
 245 250 255
 Val Met Leu Leu Phe Ala Pro
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<210> 7

<211> 633

<212> DNA

<213> Hepatitis C virus

<220>

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 <222> 1..630

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 <221> mat_peptide
 <222> 1..627

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu	
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atg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggt gct gcc aga	96
Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gaa gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg cct ggt tgc tct ttc tct atc ttc ctc ttg gct tta	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt ctg acc att cca gct tcc gct tat gag gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc act acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg	480
Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val	
145 150 155 160	
ggg gat ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc	528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile	
165 170 175	
tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat	576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr	
180 185 190	
ccc ggc cac ata aca ggt cac cgt atg gct tgg gat atg atg atg aac	624
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn	
195 200 205	
tgg taatag	633
Trp	

<210> 8

<211> 209

<212> PRT

<213> Hepatitis C virus

<400> 8

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
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          20          25          30
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
          35          40          45
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50          55          60
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65          70          75          80
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
          85          90          95
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
          100          105          110
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
          115          120          125
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
          130          135          140
Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
 145          150          155          160
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
          165          170          175
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
          180          185          190
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
          195          200          205
Trp

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<210> 9

<211> 483

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..480

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<221> mat_peptide

<222> 1..477

<400> 9

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1				5					10					15		

ctg	acc	ata	cca	gct	tcc	gct	tat	gaa	gtg	cgc	aac	gtg	tcc	ggg	gtg	96
Leu	Thr	Ile	Pro	Ala	Ser	Ala	Tyr	Glu	Val	Arg	Asn	Val	Ser	Gly	Val	
			20					25					30			

tac	cat	gtc	acg	aac	gac	tgc	tcc	aac	tca	agc	ata	gtg	tat	gag	gca	144
Tyr	His	Val	Thr	Asn	Asp	Cys	Ser	Asn	Ser	Ser	Ile	Val	Tyr	Glu	Ala	
		35				40						45				

gcg	gac	atg	atc	atg	cac	acc	ccc	ggg	tgc	gtg	ccc	tgc	gtt	cgg	gag	192
Ala	Asp	Met	Ile	Met	His	Thr	Pro	Gly	Cys	Val	Pro	Cys	Val	Arg	Glu	
	50					55					60					

ggc	aac	tcc	tcc	cgt	tgc	tgg	gtg	gcg	ctc	act	ccc	acg	ctc	gcg	gcc	240
Gly	Asn	Ser	Ser	Arg	Cys	Trp	Val	Ala	Leu	Thr	Pro	Thr	Leu	Ala	Ala	
65				70					75					80		

agg	aac	gcc	agc	gtc	ccc	aca	acg	aca	ata	cga	cgc	cac	gtc	gat	ttg	288
Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr	Thr	Ile	Arg	Arg	His	Val	Asp	Leu	
			85						90					95		

ctc	gtt	ggg	gct	gct	gct	ttc	tgt	tcc	gct	atg	tac	gtg	ggg	gat	ctc	336
Leu	Val	Gly	Ala	Ala	Ala	Phe	Cys	Ser	Ala	Met	Tyr	Val	Gly	Asp	Leu	
			100						105				110			

tgc	gga	tct	gtt	ttc	ctt	gtt	tcc	cag	ctg	ttc	acc	ttc	tca	cct	cgc	384
Cys	Gly	Ser	Val	Phe	Leu	Val	Ser	Gln	Leu	Phe	Thr	Phe	Ser	Pro	Arg	
		115					120					125				

cgg	cat	caa	aca	gta	cag	gac	tgc	aac	tgc	tca	atc	tat	ccc	ggc	cat	432
Arg	His	Gln	Thr	Val	Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	
	130					135					140					

gta	tca	ggt	cac	cgc	atg	gct	tgg	gat	atg	atg	atg	aac	tgg	tcc	taatag	483
Val	Ser	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn	Trp	Ser		
145					150					155						

<210> 10

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<212> PRT

<213> Hepatitis C virus

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Met	Pro	Gly	Cys	Ser	Phe	Ser	Ile	Phe	Leu	Leu	Ala	Leu	Leu	Ser	Cys
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Leu	Thr	Ile	Pro	Ala	Ser	Ala	Tyr	Glu	Val	Arg	Asn	Val	Ser	Gly	Val
			20					25					30		

Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala
 35 40 45
 Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu
 50 55 60
 Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala
 65 70 75 80
 Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu
 85 90 95
 Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu
 100 105 110
 Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg
 115 120 125
 Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
 130 135 140
 Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser
 145 150 155

<210> 11

<211> 480

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<213> Hepatitis C virus

<220>

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<222> 1..477

<220>

<221> mat_peptide

<222> 1..474

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1 5 10 15	
ctg acc ata cca gct tcc gct tat gaa gtg cgc aac gtg tcc ggg gtg	96
Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val	
20 25 30	
tac cat gtc acg aac gac tgc tcc aac tca agc ata gtg tat gag gca	144
Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala	
35 40 45	
gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag	192
Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu	
50 55 60	
ggc aac tcc tcc cgt tgc tgg gtg gcg ctc act ccc acg ctc gcg gcc	240
Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala	
65 70 75 80	
agg aac gcc agc gtc ccc aca acg aca ata cga cgc cac gtc gat ttg	288
Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu	
85 90 95	

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ctc gtt ggg gct gct gct ttc tgt tcc gct atg tac gtg ggg gat ctc      336
Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu
      100                      105                      110

tgc gga tct gtt ttc ctt gtt tcc cag ctg ttc acc ttc tca cct cgc      384
Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg
      115                      120                      125

cgg cat caa aca gta cag gac tgc aac tgc tca atc tat ccc ggc cat      432
Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
      130                      135                      140

gta tca ggt cac cgc atg gct tgg gat atg atg atg aac tgg taatag      480
Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
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Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala
      35          40          45

Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu
      50          55          60

Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala
      65          70          75          80

Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu
      85          90          95

Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu
      100          105          110

Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg
      115          120          125

Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
      130          135          140

Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
      145          150          155
<210> 13

<211> 636
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<213> Hepatitis C virus

<220>
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<222> 1..633

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<220>

<221> mat_peptide

<222> 1..630

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atg ctg ggt aag gcc atc gat acc ctt acg tgc ggc ttc gcc gac ctc      48
Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
  1             5             10             15
gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg      96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
          20             25             30

gcc ctg gcg cat ggc gtc cgg gtt ctg gaa gac ggc gtg aac tat gca      144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
          35             40             45

aca ggg aat ttg cct ggt tgc tct ttc tct atc ttc ctc ttg gct tta      192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
          50             55             60
ctg tcc tgt cta acc att cca gct tcc gct tac gag gtg cgc aac gtg      240
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
          65             70             75             80

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg      288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
          85             90             95

tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc      336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
          100            105            110

gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg      384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
          115            120            125

ctc gcg gct agg aac gcc agc atc ccc act aca aca ata cga cgc cac      432
Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Thr Ile Arg Arg His
          130            135            140

gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg      480
Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
          145            150            155            160

ggg gat ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc      528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
          165            170            175

tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat      576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
          180            185            190

ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac      624
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
          195            200            205

tgg tac taatag      636
Trp Tyr
          210

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<210> 14

<211> 210
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 <213> Hepatitis C virus

<400> 14

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Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
 1           5           10          15
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
          20           25          30
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
          35           40          45
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
          50           55          60
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
          65           70          75          80
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
          85           90          95
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
          100          105          110
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
          115          120          125
Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Thr Ile Arg Arg His
          130          135          140
Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
          145          150          155          160
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
          165          170          175
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
          180          185          190
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
          195          200          205

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Trp Tyr
 210

<210> 15

<211> 26
 <212> DNA
 <213> Hepatitis C virus

<400> 15

atgcccggtt gctctttctc tatctt

26

<210> 16

<211> 26
 <212> DNA

<213> Hepatitis C virus

<400> 16

atgttgggta aggtcatcga taccct

26

<210> 17

<211> 30

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 17

ctattaggac cagttcatca tcatatccca

30

<210> 18

<211> 27

<212> DNA

<213> Hepatitis C virus

<400> 18

ctattaccag ttcatcatca tatccca

27

<210> 19

<211> 36

<212> DNA

<213> Hepatitis C virus

<400> 19

atacgacgcc acgtcgattc ccagctgttc accatc

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<210> 20

<211> 36

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 20

gatggtgaac agctgggaat cgacgtggcg tcgtat

36

<210> 21

<211> 723

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..720

<220>

<221> mat_peptide

<222> 1..717

<400> 21

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1 5 10 15	
gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg	96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg	480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val	
145 150 155 160	
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt	528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg	
165 170 175	
atg gct tgg gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg	576
Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val	
180 185 190	
gta tcg cag ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg	624
Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala	
195 200 205	

ggg gcc cat tgg gga gtc ctg gcg ggt ctc gcc tac tat tcc atg gtg 672
 Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val
 210 215 220

ggg aac tgg gct aag gtt ttg att gtg atg cta ctc ttt gct ccc taatag 723
 Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro
 225 230 235

<210> 22

<211> 239

<212> PRT

<213> Hepatitis C virus

<400> 22

Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
 1 5 10 15

Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
 35 40 45

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140

Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
 145 150 155 160

Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
 165 170 175

Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
 180 185 190

Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala
 195 200 205

Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val
 210 215 220

Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro
 225 230 235

<210> 23

<211> 561
 <212> DNA
 <213> Hepatitis C virus

<220>
 <221> CDS
 <222> 1..558

<220>
 <221> mat_peptide
 <222> 1..555

<400> 23

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu	
1 5 10 15	
gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg	96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat tcc cag ctg ttc acc atc tgc cct cgc cgg cat gag acg gtg	480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val	
145 150 155 160	
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt	528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg	
165 170 175	
atg gct tgg gat atg atg atg aac tgg taatag	561
Met Ala Trp Asp Met Met Met Asn Trp	
180 185	

<210> 24

<211> 185
 <212> PRT
 <213> Hepatitis C virus

<400> 24

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
 1             5             10             15
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
      20             25             30
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
      35             40             45
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
      50             55             60
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
      65             70             75             80
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
      85             90             95
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
      100            105            110
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
      115            120            125
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
      130            135            140
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
      145            150            155            160
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
      165            170            175

Met Ala Trp Asp Met Met Met Asn Trp
      180            185

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<210> 25

<211> 606
 <212> DNA
 <213> Hepatitis C virus

<220>
 <221> CDS
 <222> 1..603

<220>
 <221> mat_peptide
 <222> 1..600

<400> 25

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 1             5             10             15

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gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg 96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
20 25 30

gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca 144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
35 40 45

aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg 192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
50 55 60

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg 240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
65 70 75 80

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg 288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
85 90 95

tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc 336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
100 105 110

gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg 384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
115 120 125

ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac 432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
130 135 140

gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg 480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
145 150 155 160

cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt 528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
165 170 175

atg gct tgg gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg 576
Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
180 185 190

gta tcg cag ctg ctc cgg atc ctc taatag 606
Val Ser Gln Leu Leu Arg Ile Leu
195 200

<210> 26

<211> 200

<212> PRT

<213> Hepatitis C virus

<400> 26

Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
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Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala

35 40 45
 Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60
 Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80
 Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95
 Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110
 Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125
 Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140
 Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
 145 150 155 160
 Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
 165 170 175
 Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
 180 185 190
 Val Ser Gln Leu Leu Arg Ile Leu
 195 200

<210> 27

<211> 636

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..633

<220>

<221> mat_peptide

<222> 1..630

<400> 27

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 1 5 10 15
 gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg 96
 Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30
 gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca 144
 Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
 35 40 45
 aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg 192
 Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60

ctg	tcc	tgt	ctg	acc	gtt	cca	gct	tcc	gct	tat	gaa	gtg	cgc	aac	gtg		240
Ieu	Ser	Cys	Leu	Thr	Val	Pro	Ala	Ser	Ala	Tyr	Glu	Val	Arg	Asn	Val		
65					70					75					80		
tcc	ggg	atg	tac	cat	gtc	acg	aac	gac	tgc	tcc	aac	tca	agc	att	gtg		288
Ser	Gly	Met	Tyr	His	Val	Thr	Asn	Asp	Cys	Ser	Asn	Ser	Ser	Ile	Val		
				85					90					95			
tat	gag	gca	gcg	gac	atg	atc	atg	cac	acc	ccc	ggg	tgc	gtg	ccc	tgc		336
Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr	Pro	Gly	Cys	Val	Pro	Cys		
			100					105					110				
gtt	cgg	gag	aac	aac	tct	tcc	cgc	tgc	tgg	gta	gcg	ctc	acc	ccc	acg		384
Val	Arg	Glu	Asn	Asn	Ser	Ser	Arg	Cys	Trp	Val	Ala	Leu	Thr	Pro	Thr		
		115					120					125					
ctc	gca	gct	agg	aac	gcc	agc	gtc	ccc	acc	acg	aca	ata	cga	cgc	cac		432
Leu	Ala	Ala	Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr	Thr	Ile	Arg	Arg	His		
		130				135						140					
gtc	gat	tcc	cag	ctg	ttc	acc	atc	tcg	cct	cgc	cgg	cat	gag	acg	gtg		480
Val	Asp	Ser	Gln	Leu	Phe	Thr	Ile	Ser	Pro	Arg	Arg	His	Glu	Thr	Val		
145				150						155					160		
cag	gac	tgc	aat	tgc	tca	atc	tat	ccc	ggc	cac	ata	acg	ggg	cac	cgt		528
Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	His	Arg		
				165				170						175			
atg	gct	tgg	gat	atg	atg	atg	aac	tgg	tcg	cct	aca	acg	gcc	ctg	gtg		576
Met	Ala	Trp	Asp	Met	Met	Met	Asn	Trp	Ser	Pro	Thr	Thr	Ala	Leu	Val		
			180					185					190				
gta	tcg	cag	ctg	ctc	cgg	atc	gtg	atc	gag	ggc	aga	cac	cat	cac	cac		624
Val	Ser	Gln	Leu	Leu	Arg	Ile	Val	Ile	Glu	Gly	Arg	His	His	His	His		
		195					200					205					
cat	cac	taatag															636
His	His																
	210																
<210>	28																
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<212>	PRT																
<213>	Hepatitis C virus																
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Met	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys	Gly	Phe	Ala	Asp	Leu		
1				5					10					15			
Val	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Leu	Gly	Gly	Ala	Ala	Arg		
			20					25					30				
Ala	Leu	Ala	His	Gly	Val	Arg	Val	Leu	Glu	Asp	Gly	Val	Asn	Tyr	Ala</		

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
130 135 140

Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
145 150 155 160

Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
165 170 175

Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
180 185 190

Val Ser Gln Leu Leu Arg Ile Val Ile Glu Gly Arg His His His His
195 200 205

His His
210

<210> 29

<211> 630

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..627

<220>

<221> mat_peptide

<222> 1..624

<400> 29

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Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met	
1 5 10 15	
ggg tac atc ccg ctc gtc ggc gct ccc gta gga ggc gtc gca aga gcc	96
Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala	
20 25 30	
ctt gcg cat ggc gtg agg gcc ctt gaa gac ggg ata aat ttc gca aca	144
Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr	
35 40 45	
ggg aat ttg ccc ggt tgc tcc ttt tct att ttc ctt ctc gct ctg ttc	192
Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe	
50 55 60	
tct tgc tta att cat cca gca gct agt cta gag tgg cgg aat acg tct	240
Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser	
65 70 75 80	

ggc ctc tat gtc ctt acc aac gac tgt tcc aat agc agt att gtg tac 288
 Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr
 85 90 95

gag gcc gat gac gtt att ctg cac aca ccc ggc tgc ata cct tgt gtc 336
 Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val
 100 105 110

cag gac ggc aat aca tcc acg tgc tgg acc cca gtg aca cct aca gtg 384
 Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val
 115 120 125

gca gtc aag tac gtc gga gca acc acc gct tgc ata cgc agt cat gtg 432
 Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val
 130 135 140

gac cta tta gtg ggc gcg gcc acg atg tgc tct gcg ctc tac gtg ggt 480
 Asp Leu Leu Val Gly Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly
 145 150 155 160

gac atg tgt ggg gct gtc ttc ctc gtg gga caa gcc ttc acg ttc aga 528
 Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg
 165 170 175

cct cgt cgc cat caa acg gtc cag acc tgt aac tgc tgc ctg tac cca 576
 Pro Arg Arg His Gln Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro
 180 185 190

ggc cat ctt tca gga cat cga atg gct tgg gat atg atg atg aac tgg 624
 Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
 195 200 205

taatag 630

<210> 30

<211> 208
 <212> PRT
 <213> Hepatitis C virus

<400> 30

Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
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Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala
 20 25 30

Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr
 35 40 45

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe
 50 55 60

Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser
 65 70 75 80

Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr
 85 90 95

Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val
 100 105 110

Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val
115 120 125

Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val
130 135 140

Asp Leu Leu Val Gly Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly
145 150 155 160

Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg
165 170 175

Pro Arg Arg His Gln Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro
180 185 190

Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
195 200 205

<210> 31

<211> 630

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..627

<220>

<221> mat_peptide

<222> 1..624

<400> 31

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ggg tat atc ccg ctc gta ggc ggc ccc att ggg ggc gtc gca agg gct 96
Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala
20 25 30

ctc gca cac ggt gtg agg gtc ctt gag gac ggg gta aac tat gca aca 144
Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr
35 40 45

ggg aat tta ccc ggt tgc tct ttc tct atc ttt att ctt gct ctt ctc 192
Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu
50 55 60

tgc tgt ctg acc gtt ccg gcc tct gca gtt ccc tac cga aat gcc tct 240
Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser
65 70 75 80

ggg att tat cat gtt acc aat gat tgc cca aac tct tcc ata gtc tat 288
Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr
85 90 95

gag gca gat aac ctg atc cta cac gca cct ggt tgc gtg cct tgt gtc 336
Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val
100 105 110

atg aca ggt aat gtg agt aga tgc tgg gtc caa att acc cct aca ctg 384

Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu
 115 120 125

tca gcc ccg agc ctc gga gca gtc acg gct cct ctt cgg aga gcc gtt 432
 Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val
 130 135 140

gac tac cta gcg gga ggg gct gcc ctc tgc tcc gcg tta tac gta gga 480
 Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly
 145 150 155 160

gac gcg tgt ggg gca cta ttc ttg gta ggc caa atg ttc acc tat agg 528
 Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg
 165 170 175

cct cgc cag cac gct acg gtg cag aac tgc aac tgt tcc att tac agt 576
 Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser
 180 185 190

ggc cat gtt acc ggc cac cgg atg gca tgg gat atg atg atg aac tgg 624
 Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
 195 200 205

taatag 630

<210> 32
 <211> 208
 <212> PRT
 <213> Hepatitis C virus

<400> 32

Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
 1 5 10 15

Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala
 20 25 30

Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr
 35 40 45

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu
 50 55 60

Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser
 65 70 75 80

Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr
 85 90 95

Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val
 100 105 110

Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu
 115 120 125

Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val
 130 135 140

Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly
 145 150 155 160

Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg
165 170 175

Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser
180 185 190

Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
195 200 205

<210> 33

<211> 23

<212> DNA

<213> Hepatitis C virus

<400> 33

tgggatatga tgatgaactg gtc

23

<210> 34

<211> 30

<212> DNA

<213> Hepatitis C virus

<400> 34

ctattatggt ggtaagccac agagcaggag

30

<210> 35

<211> 1476

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..1473

<220>

<221> mat_peptide

<222> 1..1470

<400> 35

tgg gat atg atg atg aac tgg tgg cct aca acg gcc ctg gtg gta tgg
Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser
1 5 10 15

48

cag ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc
Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala
20 25 30

96

cat tgg gga gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac
His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn
35 40 45

144

tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg
Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly
50 55 60

192

cat acc cgc gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt

240

His	Thr	Arg	Val	Ser	Gly	Gly	Ala	Ala	Ala	Ser	Asp	Thr	Arg	Gly	Leu	
65					70					75					80	
gtg	tcc	ctc	ttt	agc	ccc	ggg	tcg	gct	cag	aaa	atc	cag	ctc	gta	aac	288
Val	Ser	Leu	Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	Asn	
				85					90					95		
acc	aac	ggc	agt	tgg	cac	atc	aac	agg	act	gcc	ctg	aac	tgc	aac	gac	336
Thr	Asn	Gly	Ser	Trp	His	Ile	Asn	Arg	Thr	Ala	Leu	Asn	Cys	Asn	Asp	
			100					105					110			
tcc	ctc	caa	aca	ggg	ttc	ttt	gcc	gca	cta	ttc	tac	aaa	cac	aaa	ttc	384
Ser	Leu	Gln	Thr	Gly	Phe	Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	
		115					120					125				
aac	tcg	tct	gga	tgc	cca	gag	cgc	ttg	gcc	agc	tgt	cgc	tcc	atc	gac	432
Asn	Ser	Ser	Gly	Cys	Pro	Glu	Arg	Leu	Ala	Ser	Cys	Arg	Ser	Ile	Asp	
	130					135					140					
aag	ttc	gct	cag	ggg	tgg	ggt	ccc	ctc	act	tac	act	gag	cct	aac	agc	480
Lys	Phe	Ala	Gln	Gly	Trp	Gly	Pro	Leu	Thr	Tyr	Thr	Glu	Pro	Asn	Ser	
	145				150					155					160	
tcg	gac	cag	agg	ccc	tac	tgc	tgg	cac	tac	gcg	cct	cga	ccg	tgt	ggt	528
Ser	Asp	Gln	Arg	Pro	Tyr	Cys	Trp	His	Tyr	Ala	Pro	Arg	Pro	Cys	Gly	
				165					170					175		
att	gta	ccc	gcg	tct	cag	gtg	tgc	ggt	cca	gtg	tat	tgc	ttc	acc	ccg	576
Ile	Val	Pro	Ala	Ser	Gln	Val	Cys	Gly	Pro	Val	Tyr	Cys	Phe	Thr	Pro	
			180					185					190			
agc	cct	gtt	gtg	gtg	ggg	acg	acc	gat	cgg	ttt	ggt	gtc	ccc	acg	tat	624
Ser	Pro	Val	Val	Gly	Thr	Thr	Asp	Arg	Phe	Gly	Val	Pro	Thr	Tyr		
		195				200						205				
aac	tgg	ggg	gcg	aac	gac	tcg	gat	gtg	ctg	att	ctc	aac	aac	acg	cgg	672
Asn	Trp	Gly	Ala	Asn	Asp	Ser	Asp	Val	Leu	Ile	Leu	Asn	Asn	Thr	Arg	
	210				215						220					
ccg	ccg	cga	ggc	aac	tgg	ttc	ggc	tgt	aca	tgg	atg	aat	ggc	act	ggg	720
Pro	Pro	Arg	Gly	Asn	Trp	Phe	Gly	Cys	Thr	Trp	Met	Asn	Gly	Thr	Gly	
	225				230					235					240	
ttc	acc	aag	acg	tgt	ggg	ggc	ccc	ccg	tgc	aac	atc	ggg	ggg	gcc	ggc	768
Phe	Thr	Lys	Thr	Cys	Gly	Gly	Pro	Pro	Cys	Asn	Ile	Gly	Gly	Ala	Gly	
				245					250					255		
aac	aac	acc	ttg	acc	tgc	ccc	act	gac	tgt	ttt	cgg	aag	cac	ccc	gag	816
Asn	Asn	Thr	Leu	Thr	Cys	Pro	Thr	Asp	Cys	Phe	Arg	Lys	His	Pro	Glu	
			260					265					270			
gcc	acc	tac	gcc	aga	tgc	ggt	tct	ggg	ccc	tgg	ctg	aca	cct	agg	tgt	864
Ala	Thr	Tyr	Ala	Arg	Cys	Gly	Ser	Gly	Pro	Trp	Leu	Thr	Pro	Arg	Cys	
		275					280					285				
atg	gtt	cat	tac	cca	tat	agg	ctc	tgg	cac	tac	ccc	tgc	act	gtc	aac	912
Met	Val	His	Tyr	Pro	Tyr	Arg	Leu	Trp	His	Tyr	Pro	Cys	Thr	Val	Asn	
	290					295					300					
ttc	acc	atc	ttc	aag	gtt	agg	atg	tac	gtg	ggg	ggc	gtg	gag	cac	agg	960
Phe	Thr	Ile	Phe	Lys	Val	Arg	Met	Tyr	Val	Gly	Gly	Val	Glu	His	Arg	
	305				310					315					320	

ttc gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag 1008
 Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu
 325 330 335
 gac agg gat aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag 1056
 Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu
 340 345 350
 tgg cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc 1104
 Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr
 355 360 365
 ggc ctg atc cac ctg cat cag aac atc gtg gac gtg caa tac ctg tac 1152
 Gly Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr
 370 375 380
 ggt gta ggg tgg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc 1200
 Gly Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val
 385 390 395 400
 ctg ttg ctg ttc ctt ctg ctg gca gac gcg cgc atc tgc gcc tgc tta 1248
 Leu Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu
 405 410 415
 tgg atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg 1296
 Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu
 420 425 430
 gtg gtc ctg aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc 1344
 Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser
 435 440 445
 ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc 1392
 Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val
 450 455 460
 cct ggt gcg gca tac gcc ttc tat ggc gtg tgg ccg ctg ctg ctg ctt 1440
 Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu
 465 470 475 480
 ctg ctg gcc tta cca cca cga gct tat gcc tagtaa 1476
 Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
 485 490

<210> 36

<211> 490

<212> PRT

<213> Hepatitis C virus

<400> 36

Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser
 1 5 10 15
 Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala
 20 25 30
 His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn
 35 40 45
 Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly
 50 55 60

His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu
 65 70 75 80
 Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn
 85 90 95
 Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp
 100 105 110
 Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe
 115 120 125
 Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp
 130 135 140
 Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser
 145 150 155 160
 Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly
 165 170 175
 Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro
 180 185 190
 Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr
 195 200 205
 Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg
 210 215 220
 Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly
 225 230 235 240
 Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly
 245 250 255
 Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu
 260 265 270
 Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys
 275 280 285
 Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn
 290 295 300
 Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg
 305 310 315 320
 Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu
 325 330 335
 Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu
 340 345 350
 Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr
 355 360 365
 Gly Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr
 370 375 380
 Gly Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val
 385 390 395 400

0999550 072902

Leu	Leu	Leu	Phe	Leu	Leu	Leu	Ala	Asp	Ala	Arg	Ile	Cys	Ala	Cys	Leu
				405					410						
Trp	Met	Met	Leu	Leu	Ile	Ala	Gln	Ala	Glu	Ala	Ala	Leu	Glu	Asn	Leu
				420					425		430				
Val	Val	Leu	Asn	Ala	Ala	Ala	Val	Ala	Gly	Ala	His	Gly	Thr	Leu	Ser
				435	440				445						
Phe	Leu	Val	Phe	Phe	Cys	Ala	Ala	Trp	Tyr	Ile	Lys	Gly	Arg	Leu	Val
				450	455				460						
Pro	Gly	Ala	Ala	Tyr	Ala	Phe	Tyr	Gly	Val	Trp	Pro	Leu	Leu	Leu	Leu
465				470				475				480			
Leu	Leu	Ala	Leu	Pro	Pro	Arg	Ala	Tyr	Ala						
				485		490									

<210> 37

$\langle 211 \rangle$ 1021

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1018

<220>

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<221> mat_peptide
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<222> 2..1015

<400> 37

g	atc	cca	caa	gct	gtc	gtg	gac	atg	gtg	gcg	ggg	gcc	cat	tgg	gga	46
Ile	Pro	Gln	Ala	Val	Val	Asp	Met	Val	Ala	Gly	Ala	His	Trp	Gly		
1				5					10					15		
gtc	ctg	gcg	ggc	ctc	gcc	tac	tat	tcc	atg	gtg	ggg	aac	tgg	gct	aag	94
Val	Leu	Ala	Gly	Leu	Ala	Tyr	Tyr	Ser	Met	Val	Gly	Asn	Trp	Ala	Lys	
				20					25					30		
gtt	ttg	gtt	gtg	atg	cta	ctc	ttt	gcc	ggc	gtc	gac	ggg	cat	acc	cgc	142
Val	Leu	Val	Val	Met	Leu	Leu	Phe	Ala	Gly	Val	Asp	Gly	His	Thr	Arg	
			35					40					45			
gtg	tca	gga	ggg	gca	gca	gcc	tcc	gat	acc	agg	ggc	ctt	gtg	tcc	ctc	190
Val	Ser	Gly	Gly	Ala	Ala	Ala	Ser	Asp	Thr	Arg	Gly	Leu	Val	Ser	Leu	
		50					55					60				
ttt	agc	ccc	ggg	tcg	gct	cag	aaa	atc	cag	ctc	gta	aac	acc	aac	ggc	238
Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	Asn	Thr	Asn	Gly	
	65					70					75					
agt	tgg	cac	atc	aac	agg	act	gcc	ctg	aac	tgc	aac	gac	tcc	ctc	caa	286
Ser	Trp	His	Ile	Asn	Arg	Thr	Ala	Leu	Asn	Cys	Asn	Asp	Ser	Leu	Gln	
80					85					90					95	
aca	ggg	ttc	ttt	gcc	gca	cta	ttc	tac	aaa	cac	aaa	ttc	aac	tcg	tct	334
Thr	Gly	Phe	Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	Asn	Ser	Ser	
				100					105					110		

[illegible]

<210> 38

<211> 338

<212> PRT

<213> Hepatitis C virus

<400> 38

Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val
 1 5 10 15
 Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val
 20 25 30
 Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val
 35 40 45
 Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe
 50 55 60
 Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser
 65 70 75 80
 Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr
 85 90 95
 Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly
 100 105 110
 Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln
 115 120 125
 Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg
 130 135 140
 Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala
 145 150 155 160
 Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val
 165 170 175
 Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala
 180 185 190
 Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly
 195 200 205
 Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr
 210 215 220
 Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu
 225 230 235 240
 Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala
 245 250 255
 Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr
 260 265 270
 Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe
 275 280 285
 Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala
 290 295 300
 Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg
 305 310 315 320

Arq Ala

<210> 39

<211> 1034

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1032

<220>

<221> mat peptide

<222> 2...1029

<400> 39

g atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga 46
Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly
1 5 10 15

gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag 94
Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys
20 25 30

gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc 142
Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg
35 40 45

gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc 190
Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu
50 55 60

ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc 238
Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly
65 70 75

agt tgg cac atc aac agg act gcc ctg aac tgc aac gac tcc ctc caa 286
 Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln
 80 85 90 95

aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc aac tcg tct 334
Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser
100 105 110

gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac aag ttc gct 382
Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala
115 120 125

cag ggg tgg ggt ccc ctc act tac act gag cct aac agc tcg gac cag 430
Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln
130 135 140

agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt att gta ccc 478
Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro
145 150 155

gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg agc cct gtt 526
 Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val
 160 165 170 175
 gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat aac tgg ggg 574
 Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly
 180 185 190
 gcg aac gac tcg gat gtg ctg att ctc aac aac acg cgg ccg ccg cga 622
 Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg
 195 200 205
 ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg ttc acc aag 670
 Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys
 210 215 220
 acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac aac acc 718
 Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr
 225 230 235
 ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag gcc acc tac 766
 Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr
 240 245 250 255
 gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt atg gtt cat 814
 Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His
 260 265 270
 tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac ttc acc atc 862
 Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile
 275 280 285
 ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc gaa gcc 910
 Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala
 290 295 300
 gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac agg gat 958
 Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp
 305 310 315
 aga tca gag ctt agc ccg ctg ctg ctg tct aca aca ggt gat cga ggg 1006
 Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Gly Asp Arg Gly
 320 325 330 335
 cag aca cca tca cca cca tca cta at ag 1034
 Gln Thr Pro Ser Pro Pro Ser Leu
 340
 <210> 40
 <211> 343
 <212> PRT
 <213> Hepatitis C virus
 <400> 40
 Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val
 1 5 10 15
 Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val
 20 25 30
 Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val

35 40 45
 Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe
 50 55 60
 Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser
 65 70 75 80
 Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr
 85 90 95
 Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly
 100 105 110
 Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln
 115 120 125
 Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg
 130 135 140
 Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala
 145 150 155 160
 Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val
 165 170 175
 Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala
 180 185 190
 Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly
 195 200 205
 Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr
 210 215 220
 Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu
 225 230 235 240
 Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala
 245 250 255
 Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr
 260 265 270
 Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe
 275 280 285
 Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala
 290 295 300
 Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg
 305 310 315 320
 Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Gly Asp Arg Gly Gln
 325 330 335
 Thr Pro Ser Pro Pro Ser Leu
 340

<210> 41

<211> 945

<212> DNA

<213> Hepatitis C virus

<220>
 <221> CDS
 <222> 1..942

<220>
 <221> mat_peptide
 <222> 1..939

<400> 41

atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc	48
Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala	
1 5 10 15	
ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc gat	96
Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp	
20 25 30	
acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc	144
Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile	
35 40 45	
cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc ctg	192
Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu	
50 55 60	
aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac	240
Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr	
65 70 75 80	
aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt	288
Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys	
85 90 95	
cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac act	336
Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr	
100 105 110	
gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg cct	384
Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro	
115 120 125	
cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg tat	432
Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr	
130 135 140	
tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt	480
Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly	
145 150 155 160	
gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc	528
Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu	
165 170 175	
aac aac acg cgg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg	576
Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met	
180 185 190	
aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc	624
Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile	
195 200 205	
ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt cgg	672

Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg
 210 215 220
 aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg 720
 Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu
 225 230 235 240
 aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac ccc 768
 Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro
 245 250 255
 tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc 816
 Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly
 260 265 270
 gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag cgt 864
 Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg
 275 280 285
 tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg ctg 912
 Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu
 290 295 300
 tct aca aca gag tgg cag agc tta att aat tag 945
 Ser Thr Thr Glu Trp Gln Ser Leu Ile Asn
 305 310
 <210> 42
 <211> 314
 <212> PRT
 <213> Hepatitis C virus
 <400> 42
 Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala
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 Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp
 20 25 30
 Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile
 35 40 45
 Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu
 50 55 60
 Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr
 65 70 75 80
 Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys
 85 90 95
 Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr
 100 105 110
 Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro
 115 120 125
 Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr
 130 135 140
 Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly
 145 150 155 160

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Val	Pro	Thr	Tyr	Asn 165	Trp	Gly	Ala	Asn	Asp	Ser	Asp	Val	Leu	Ile	Leu
Asn	Asn	Thr	Arg 180	Pro	Pro	Arg	Gly	Asn 185	Trp	Phe	Gly	Cys	Thr 190	Trp	Met
Asn	Gly	Thr 195	Gly	Phe	Thr	Lys	Thr 200	Cys	Gly	Gly	Pro	Pro 205	Cys	Asn	Ile
Gly	Gly 210	Ala	Gly	Asn	Asn	Thr 215	Leu	Thr	Cys	Pro	Thr 220	Asp	Cys	Phe	Arg
Lys 225	His	Pro	Glu	Ala	Thr 230	Tyr	Ala	Arg	Cys 235	Gly	Ser	Gly	Pro	Trp	Leu 240
Thr	Pro	Arg	Cys	Met 245	Val	His	Tyr	Pro	Tyr 250	Arg	Leu	Trp	His	Tyr 255	Pro
Cys	Thr	Val	Asn 260	Phe	Thr	Ile	Phe	Lys 265	Val	Arg	Met	Tyr	Val 270	Gly	Gly
Val	Glu 275	His	Arg	Phe	Glu	Ala	Ala 280	Cys	Asn	Trp	Thr 285	Arg	Gly	Glu	Arg
Cys 290	Asp	Leu	Glu	Asp	Arg	Asp 295	Arg	Ser	Glu	Leu	Ser 300	Pro	Leu	Leu	Leu
Ser 305	Thr	Thr	Glu	Trp	Gln 310	Ser	Leu	Ile	Asn						

<210> 43

<211> 961

<212> DNA

<213> Hepatitis C virus

 $\langle 220 \rangle$

<221> CDS

<222> 1..958

 $\langle 220 \rangle$

<221> mat peptide

<222> 1..955

<400> 43

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Met	Val	Gly	Asn	Trp	Ala	Lys	Val	Leu	Val	Val	Met	Leu	Leu	Phe	Ala	
1				5				10						15		
ggc	gtc	gac	ggg	cat	acc	cgc	gtg	tca	gga	ggg	gca	gca	gcc	tcc	gat	96
Gly	Val	Asp	Gly	His	Thr	Arg	Val	Ser	Gly	Gly	Ala	Ala	Ala	Ser	Asp	
			20					25					30			
acc	agg	ggc	ctt	gtg	tcc	ctc	ttt	agc	ccc	ggg	tcg	gct	cag	aaa	atc	144
Thr	Arg	Gly	Leu	Val	Ser	Leu	Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	
			35				40					45				
cag	ctc	gta	aac	acc	aac	ggc	agt	tgg	cac	atc	aac	agg	act	gcc	ctg	192
Gln	Leu	Val	Asn	Thr	Asn	Gly	Ser	Trp	His	Ile	Asn	Arg	Thr	Ala	Leu	
	50					55					60					

aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac	240
Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr	
65 70 75 80	
aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt	288
Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys	
85 90 95	
cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac act	336
Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr	
100 105 110	
gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg cct	384
Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro	
115 120 125	
cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg tat	432
Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr	
130 135 140	
tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt	480
Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly	
145 150 155 160	
gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc	528
Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu	
165 170 175	
aac aac acg ccg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg	576
Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met	
180 185 190	
aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc	624
Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile	
195 200 205	
ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt cgg	672
Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg	
210 215 220	
aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg	720
Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu	
225 230 235 240	
aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac ccc	768
Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro	
245 250 255	
tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc	816
Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly	
260 265 270	
gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag cgt	864
Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg	
275 280 285	
tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg ctg	912
Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu	
290 295 300	
tct aca aca ggt gat cga ggg cag aca cca tca cca cca tca cta a	958
Ser Thr Thr Gly Asp Arg Gly Gln Thr Pro Ser Pro Pro Ser Leu	
305 310 315	

961

<211> 319

<212> PRT

<213> Hepatitis C virus

<400> 44

Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala
1 5 10 15

Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp
20 25 30

Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile
35 40 45

Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu
50 55 60

Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr
65 70 75 80

Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys
85 90 95

Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr
100 105 110

Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro
115 120 125

Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr
130 135 140

Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly
145 150 155 160

Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu
165 170 175

Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met
180 185 190

Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile
195 200 205

Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg
210 215 220

Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu
225 230 235 240

Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro
245 250 255

Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Glu
260 265 270

Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg

03 09 09 05 23 00 00 07 22 00 00.

[illegible]

tat tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe 165 170 175	528
ggg gtc ccc acg tat aac tgg ggg gcg aac gac tgc gat gtg ctg att Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile 180 185 190	576
ctc aac aac acg cgg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp 195 200 205	624
atg aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn 210 215 220	672
atc ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe 225 230 235 240	720
cgg aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp 245 250 255	768
ctg aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr 260 265 270	816
ccc tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly 275 280 285	864
ggc gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu 290 295 300	912
cgt tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu 305 310 315 320	960
ctg tct aca aca gag tgg cag ata ctg ccc tgt tcc ttc acc acc ctg Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu 325 330 335	1008
ccg gcc cta tcc acc ggc ctg atc cac ctc cat cag aac atc gtg gac Pro Ala Leu Ser Thr Gly Leu Ile His Leu His Gln Asn Ile Val Asp 340 345 350	1056
gtg caa tac ctg tac ggt gta ggg tgc gcg gtt gtc tcc ctt gtc atc Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val Val Ser Leu Val Ile 355 360 365	1104
aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc ctg gca gac gcg cgc Lys Trp Glu Tyr Val Leu Leu Phe Leu Leu Ala Asp Ala Arg 370 375 380	1152
atc tgc gcc tgc tta tgg atg atg ctg ctg ata gct caa gct gag gcc Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala 385 390 395 400	1200
gcc tta gag aac ctg gtg gtc ctc aat gcg gcg gcc gtg gcc ggg gcg Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Val Ala Gly Ala 1248	

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          405          410          415
cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc      1296
His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile
          420          425          430

aag ggc agg ctg gtc cct ggt gcg gca tac gcc ttc tat ggc gtg tgg      1344
Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp
          435          440          445

ccg ctg ctc ctg ctt ctg ctg gcc tta cca cca cga gct tat gcc tagtaa      1395
Pro Leu Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
          450          455          460
<210> 46

<211> 463
<212> PRT
<213> Hepatitis C virus

<400> 46

Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr
  1          5          10          15

Ser Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe
          20          25          30
Ala Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser
          35          40          45

Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys
  50          55          60

Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala
  65          70          75          80

Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe
          85          90          95

Tyr Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser
          100          105          110

Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr
          115          120          125

Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala
          130          135          140

Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val
          145          150          155          160

Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe
          165          170          175

Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile
          180          185          190

Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp
          195          200          205

Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn
          210          215          220

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Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe
 225 230 235 240
 Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp
 245 250 255
 Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr
 260 265 270
 Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly
 275 280 285
 Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu
 290 295 300
 Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu
 305 310 315 320
 Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu
 325 330 335
 Pro Ala Leu Ser Thr Gly Leu Ile His Leu His Gln Asn Ile Val Asp
 340 345 350
 Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val Val Ser Leu Val Ile
 355 360 365
 Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg
 370 375 380
 Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala
 385 390 395 400
 Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala
 405 410 415
 His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile
 420 425 430
 Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp
 435 440 445
 Pro Leu Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
 450 455 460

<210> 47

<211> 2082

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..2079

<220>

<221> mat_peptide

<222> 1..2076

<400> 47

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 Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu

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gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg				96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	20	25	30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca				144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	35	40	45	
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg				192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	50	55	60	
ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg				240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	65	70	75	80
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg				288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	85	90	95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc				336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	100	105	110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg				384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	115	120	125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac				432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	130	135	140	
gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg				480
Val Asp Leu Leu Val Gly Ala Ala Phe Cys Ser Ala Met Tyr Val	145	150	155	160
ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc				528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile	165	170	175	
tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat				576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr	180	185	190	
ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac				624
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn	195	200	205	
tgg tcg cct aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca				672
Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro	210	215	220	
caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg				720
Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala	225	230	235	240
ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg gtt				768
Gly Leu Ala Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Val	245	250	255	
gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc gtg tca gga				816

Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val Ser Gly	
260 265 270	
ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc ttt agc ccc	864
Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro	
275 280 285	
ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc agt tgg cac	912
Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His	
290 295 300	
atc aac agg act gcc ctg aac tgc aac gac tcc ctc caa aca ggg ttc	960
Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe	
305 310 315 320	
ttt gcc gca cta ttc tac aaa cac aaa ttc aac tcg tct gga tgc cca	1008
Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly Cys Pro	
325 330 335	
gag cgc ttg gcc agc tgt cgc tcc atc gac aag ttc gct cag ggg tgg	1056
Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp	
340 345 350	
ggg ccc ctc act tac act gag cct aac agc tcg gac cag agg ccc tac	1104
Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr	
355 360 365	
tgc tgg cac tac gcg cct cga ccg tgt ggt att gta ccc gcg tct cag	1152
Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln	
370 375 380	
gtg tgc ggt cca gtg tat tgc ttc acc ccg agc cct gtt gtg gtg ggg	1200
Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly	
385 390 395 400	
acg acc gat cgg ttt ggt gtc ccc acg tat aac tgg ggg gcg aac gac	1248
Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp	
405 410 415	
tcg gat gtg ctg att ctc aac aac acg cgg ccg ccg cga ggc aac tgg	1296
Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp	
420 425 430	
ttc ggc tgt aca tgg atg aat ggc act ggg ttc acc aag acg tgt ggg	1344
Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly	
435 440 445	
ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac aac acc ttg acc tgc	1392
Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys	
450 455 460	
ccc act gac tgt ttt cgg aag cac ccc gag gcc acc tac gcc aga tgc	1440
Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys	
465 470 475 480	
ggg tct ggg ccc tgg ctg aca cct agg tgt atg gtt cat tac cca tat	1488
Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr	
485 490 495	
agg ctc tgg cac tac ccc tgc act gtc aac ttc acc atc ttc aag gtt	1536
Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val	
500 505 510	
agg atg tac gtg ggg ggc gtg gag cac agg ttc gaa gcc gca tgc aat	1584

Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn
515 520 525

tgg act cga gga gag cgt tgt gac ttg gag gac agg gat aga tca gag 1632
Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu
530 535 540

ctt agc ccg ctg ctg ctg tct aca aca gag tgg cag ata ctg ccc tgt 1680
Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys
545 550 555 560

tcc ttc acc acc ctg ccg gcc cta tcc acc ggc ctg atc cac ctc cat 1728
Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly Leu Ile His Leu His
565 570 575

cag aac atc gtg gac gtg caa tac ctg tac ggt gta ggg tcg gcg gtt 1776
Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val
580 585 590

gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc 1824
Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu
595 600 605

ctg gca gac gcg cgc atc tgc gcc tgc tta tgg atg atg ctg ctg ata 1872
Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile
610 615 620

gct caa gct gag gcc gcc tta gag aac ctg gtg gtc ctc aat gcg gcg 1920
Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala
625 630 635 640

gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt 1968
Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys
645 650 655

gct gcc tgg tac atc aag ggc agg ctg gtc cct ggt gcg gca tac gcc 2016
Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala
660 665 670

ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg ctg gcc tta cca cca 2064
Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Ala Leu Pro Pro
675 680 685

cga gct tat gcc tagtaa 2082
Arg Ala Tyr Ala
690

<210> 48

<211> 692

<212> PRT

<213> Hepatitis C virus

<400> 48

Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
1 5 10 15

Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala

35					40					45					
Thr	Gly	Asn	Leu	Pro	Gly	Cys	Ser	Phe	Ser	Ile	Phe	Leu	Leu	Ala	Leu
	50					55					60				
Leu	Ser	Cys	Leu	Thr	Val	Pro	Ala	Ser	Ala	Tyr	Glu	Val	Arg	Asn	Val
65					70					75					80
Ser	Gly	Met	Tyr	His	Val	Thr	Asn	Asp	Cys	Ser	Asn	Ser	Ser	Ile	Val
				85					90					95	
Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr	Pro	Gly	Cys	Val	Pro	Cys
		100						105					110		
Val	Arg	Glu	Asn	Asn	Ser	Ser	Arg	Cys	Trp	Val	Ala	Leu	Thr	Pro	Thr
		115					120					125			
Leu	Ala	Ala	Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr	Thr	Ile	Arg	Arg	His
	130						135				140				
Val	Asp	Leu	Leu	Val	Gly	Ala	Ala	Ala	Phe	Cys	Ser	Ala	Met	Tyr	Val
145					150					155					160
Gly	Asp	Leu	Cys	Gly	Ser	Val	Phe	Leu	Val	Ser	Gln	Leu	Phe	Thr	Ile
				165					170					175	
Ser	Pro	Arg	Arg	His	Glu	Thr	Val	Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr
			180					185					190		
Pro	Gly	His	Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn
		195					200					205			
Trp	Ser	Pro	Thr	Thr	Ala	Leu	Val	Val	Ser	Gln	Leu	Leu	Arg	Ile	Pro
	210					215					220				
Gln	Ala	Val	Val	Asp	Met	Val	Ala	Gly	Ala	His	Trp	Gly	Val	Leu	Ala
225					230					235					240
Gly	Leu	Ala	Tyr	Tyr	Ser	Met	Val	Gly	Asn	Trp	Ala	Lys	Val	Leu	Val
				245					250					255	
Val	Met	Leu	Leu	Phe	Ala	Gly	Val	Asp	Gly	His	Thr	Arg	Val	Ser	Gly
		260						265					270		
Gly	Ala	Ala	Ala	Ser	Asp	Thr	Arg	Gly	Leu	Val	Ser	Leu	Phe	Ser	Pro
		275					280					285			
Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	Asn	Thr	Asn	Gly	Ser	Trp	His
	290					295					300				
Ile	Asn	Arg	Thr	Ala	Leu	Asn	Cys	Asn	Asp	Ser	Leu	Gln	Thr	Gly	Phe
305					310					315					320
Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	Asn	Ser	Ser	Gly	Cys	Pro
				325					330					335	
Glu	Arg	Leu	Ala	Ser	Cys	Arg	Ser	Ile	Asp	Lys	Phe	Ala	Gln	Gly	Trp
		340						345					350		
Gly	Pro	Leu	Thr	Tyr	Thr	Glu	Pro	Asn	Ser	Ser	Asp	Gln	Arg	Pro	Tyr
	355						360					365			
Cys	Trp	His	Tyr	Ala	Pro	Arg	Pro	Cys	Gly	Ile	Val	Pro	Ala	Ser	Gln
	370					375					380				

Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly
 385 390 395 400
 Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp
 405 410 415
 Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp
 420 425 430
 Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly
 435 440 445
 Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys
 450 455 460
 Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys
 465 470 475 480
 Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr
 485 490 495
 Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val
 500 505 510
 Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn
 515 520 525
 Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu
 530 535 540
 Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys
 545 550 555 560
 Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly Leu Ile His Leu His
 565 570 575
 Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val
 580 585 590
 Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu
 595 600 605
 Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile
 610 615 620
 Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala
 625 630 635 640
 Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys
 645 650 655
 Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala
 660 665 670
 Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu Ala Leu Pro Pro
 675 680 685
 Arg Ala Tyr Ala
 690

<211> 2433
 <212> DNA
 <213> Hepatitis C virus

<220>
 <221> CDS
 <222> 1..2430

<220>
 <221> mat_peptide
 <222> 1..2427

<400> 49

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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn	
1 5 10 15	
cgc cgc cca cag gac gtc aag ttc ccg ggc ggt ggt cag atc gtt ggt	96
Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly	
20 25 30	
gga gtt tac ctg ttg ccg cgc agg ggc ccc agg ttg ggt gtg cgc gcg	144
Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala	
35 40 45	
act agg aag act tcc gag cgg tgc caa cct cgt ggg agg cga caa cct	192
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro	
50 55 60	
atc ccc aag gct cgc cga ccc gag ggt agg gcc tgg gct cag ccc ggg	240
Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly	
65 70 75 80	
tac cct tgg ccc ctg tat ggc aat gag ggc atg ggg tgg gca gga tgg	288
Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp	
85 90 95	
ctc ctg tca ccc cgc ggc tct cgg cct agt tgg ggc cct aca gac ccc	336
Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro	
100 105 110	
cgg cgt agg tgc cgt aat ttg ggt aag gtc atc gat acc ctt aca tgc	384
Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys	
115 120 125	
ggc ttc gcc gac ctg gtg ggg tac att ccg ctg gtc ggc gcc ccc cta	432
Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu	
130 135 140	
ggg ggc gct gcc agg gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac	480
Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp	
145 150 155 160	
ggc gtg aac tat gca aca ggg aat ttg ccc ggt tgc tct ttc tct atc	528
Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile	
165 170 175	
ttc ctg ttg gct ttg ctg tcc tgt ctg acc gtt cca gct tcc gct tat	576
Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr	
180 185 190	
gaa gtg cgc aac gtg tcc ggg atg tac cat gtc acg aac gac tgc tcc	624

Glu	Val	Arg	Asn	Val	Ser	Gly	Met	Tyr	His	Val	Thr	Asn	Asp	Cys	Ser		
		195					200					205					
aac	tca	agc	att	gtg	tat	gag	gca	gcg	gac	atg	atc	atg	cac	acc	ccc	672	
Asn	Ser	Ser	Ile	Val	Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr	Pro		
	210					215					220						
ggg	tgc	gtg	ccc	tgc	gtt	cgg	gag	aac	aac	tct	tcc	cgc	tgc	tgg	gta	720	
Gly	Cys	Val	Pro	Cys	Val	Arg	Glu	Asn	Asn		Ser	Arg	Cys	Trp	Val		
225					230					235					240		
gcg	ctc	acc	ccc	acg	ctc	gca	gct	agg	aac	gcc	agc	gtc	ccc	acc	acg	768	
Ala	Leu	Thr	Pro	Thr	Leu	Ala	Ala	Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr		
				245					250					255			
aca	ata	cga	cgc	cac	gtc	gat	ttg	ctc	gtt	ggg	gcg	gct	gct	ttc	tgt	816	
Thr	Ile	Arg	Arg	His	Val	Asp	Leu	Leu	Val	Gly	Ala	Ala	Ala	Phe	Cys		
			260					265					270				
tcc	gct	atg	tac	gtg	ggg	gac	ctc	tgc	gga	tct	gtc	ttc	ctc	gtc	tcc	864	
Ser	Ala	Met	Tyr	Val	Gly	Asp	Leu	Cys	Gly	Ser	Val	Phe	Leu	Val	Ser		
	275						280					285					
cag	ctg	ttc	acc	atc	tcg	cct	cgc	cgg	cat	gag	acg	gtg	cag	gac	tgc	912	
Gln	Leu	Phe	Thr	Ile	Ser	Pro	Arg	Arg	His	Glu	Thr	Val	Gln	Asp	Cys		
	290					295					300						
aat	tgc	tca	atc	tat	ccc	ggc	cac	ata	acg	ggt	cac	cgt	atg	gct	tgg	960	
Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	His	Arg	Met	Ala	Trp		
305					310					315				320			
gat	atg	atg	atg	aac	tgg	tcg	cct	aca	acg	gcc	ctg	gtg	gta	tcg	cag	1008	
Asp	Met	Met	Met	Asn	Trp	Ser	Pro	Thr	Thr	Ala	Leu	Val	Val	Ser	Gln		
				325					330					335			
ctg	ctc	cgg	atc	cca	caa	gct	gtc	gtg	gac	atg	gtg	gcg	ggg	gcc	cat	1056	
Leu	Leu	Arg	Ile	Pro	Gln	Ala	Val	Val	Asp	Met	Val	Ala	Gly	Ala	His		
			340					345					350				
tgg	gga	gtc	ctg	gcg	ggc	ctc	gcc	tac	tat	tcc	atg	gtg	ggg	aac	tgg	1104	
Trp	Gly	Val	Leu	Ala	Gly	Leu	Ala	Tyr	Tyr	Ser	Met	Val	Gly	Asn	Trp		
	355					360						365					
gct	aag	gtt	ttg	gtt	gtg	atg	cta	ctc	ttt	gcc	ggc	gtc	gac	ggg	cat	1152	
Ala	Lys	Val	Leu	Val	Val	Met	Leu	Leu	Phe	Ala	Gly	Val	Asp	Gly	His		
	370				375					380							
acc	cgc	gtg	tca	gga	ggg	gca	gca	gcc	tcc	gat	acc	agg	ggc	ctt	gtg	1200	
Thr	Arg	Val	Ser	Gly	Gly	Ala	Ala	Ala	Ser	Asp	Thr	Arg	Gly	Leu	Val		
385					390					395				400			
tcc	ctc	ttt	agc	ccc	ggg	tcg	gct	cag	aaa	atc	cag	ctc	gta	aac	acc	1248	
Ser	Leu	Phe	Ser	Pro	Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	Asn	Thr		
				405				410						415			
aac	ggc	agt	tgg	cac	atc	aac	agg	act	gcc	ctg	aac	tgc	aac	gac	tcc	1296	
Asn	Gly	Ser	Trp	His	Ile	Asn	Arg	Thr	Ala	Leu	Asn	Cys	Asn	Asp	Ser		
			420					425					430				
ctc	caa	aca	ggg	ttc	ttt	gcc	gca	cta	ttc	tac	aaa	cac	aaa	ttc	aac	1344	
Leu	Gln	Thr	Gly	Phe	Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	Asn		
		435				440						445					

tcg tct gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac aag Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys 450 455 460	1392
ttc gct cag ggg tgg ggt ccc ctc act tac act gag cct aac agc tcg Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser 465 470 475 480	1440
gac cag agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt att Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile 485 490 495	1488
gta ccc gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg agc Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser 500 505 510	1536
cct gtt gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat aac Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Thr Tyr Asn 515 520 525	1584
tgg ggg gcg aac gac tcg gat gtg ctg att ctc aac aac acg cgg ccg Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro 530 535 540	1632
ccg cga ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg ttc Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe 545 550 555 560	1680
acc aag acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn 565 570 575	1728
aac acc ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag gcc Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala 580 585 590	1776
acc tac gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt atg Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met 595 600 605	1824
gtt cat tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac ttc Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe 610 615 620	1872
acc atc ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe 625 630 635 640	1920
gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp 645 650 655	1968
agg gat aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag tgg Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp 660 665 670	2016
cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc ggc Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly 675 680 685	2064
ctg atc cac ctc cat cag aac atc gtg gac gtg caa tac ctg tac ggt Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly 690 695 700	2112

gta ggg tcg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg 2160
Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu
705 710 715 720

ttg ctc ttc ctt ctc ctg gca gac gcg cgc atc tgc gcc tgc tta tgg 2208
Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp
725 730 735

atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg gtg 2256
Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val
740 745 750

gtc ctc aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc 2304
Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe
755 760 765

ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc cct 2352
Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro
770 775 780

ggg gcg gca tac gcc ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg 2400
Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu
785 790 795 800

ctg gcc tta cca cca cga gct tat gcc tagtaa 2433
Leu Ala Leu Pro Pro Arg Ala Tyr Ala
805

<210> 50

<211> 809

<212> PRT

<213> Hepatitis C virus

<400> 50

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160
 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175
 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
 180 185 190
 Glu Val Arg Asn Val Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser
 195 200 205
 Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro
 210 215 220
 Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val
 225 230 235 240
 Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr
 245 250 255
 Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys
 260 265 270
 Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser
 275 280 285
 Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys
 290 295 300
 Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala Trp
 305 310 315 320
 Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln
 325 330 335
 Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His
 340 345 350
 Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp
 355 360 365
 Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His
 370 375 380
 Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val
 385 390 395 400
 Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr
 405 410 415
 Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser
 420 425 430
 Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn
 435 440 445
 Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys
 450 455 460
 Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser
 465 470 475 480

Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile
 485 490 495
 Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser
 500 505 510
 Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn
 515 520 525
 Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro
 530 535 540
 Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe
 545 550 555 560
 Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn
 565 570 575
 Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala
 580 585 590
 Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met
 595 600 605
 Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe
 610 615 620
 Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe
 625 630 635 640
 Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp
 645 650 655
 Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp
 660 665 670
 Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly
 675 680 685
 Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly
 690 695 700
 Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu
 705 710 715 720
 Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp
 725 730 735
 Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val
 740 745 750
 Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe
 755 760 765
 Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro
 770 775 780
 Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu
 785 790 795 800
 Leu Ala Leu Pro Pro Arg Ala Tyr Ala
 805

<210> 51

<211> 17

<212> PRT

<213> Hepatitis C virus

<400> 51

Ser	Asn	Ser	Ser	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr	Pro	Gly	Cys
1				5					10					15	
Val															

<210> 52

<211> 22

<212> PRT

<213> Hepatitis C virus

<400> 52

Gly	Gly	Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn	Trp
1				5					10					15	
Ser Pro Thr Thr Ala Leu															
20															

<210> 53

<211> 37

<212> PRT

<213> Hepatitis C virus

<400> 53

Tyr	Glu	Val	Arg	Asn	Val	Ser	Gly	Ile	Tyr	His	Val	Thr	Asn	Asp	Cys
1				5					10					15	
Ser Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr															
20 25 30															
Pro Gly Cys Gly Lys															
35															

<210> 54

<211> 25

<212> PRT

<213> Hepatitis C virus

<400> 54

Gly	Gly	Thr	Pro	Thr	Val	Ala	Thr	Arg	Asp	Gly	Lys	Leu	Pro	Ala	Thr
1				5					10					15	

Gln Leu Arg Arg His Ile Asp Leu Leu
 20 25

<210> 55

<211> 25

<212> PRT

<213> Hepatitis C virus

<400> 55

Gly Gly Thr Pro Thr Leu Ala Ala Arg Asp Ala Ser Val Pro Thr Thr
 1 5 10 15

Thr Ile Arg Arg His Val Asp Leu Leu
 20 25

<210> 56

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 56

Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Gln Val Arg Asn
 1 5 10 15

Ser Thr Gly Leu
 20

<210> 57

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 57

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro
 1 5 10 15

Asn Ser Ser Ile
 20

<210> 58

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 58

Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala His Asp Ala Ile
 1 5 10 15

Leu His Thr Pro

20

<210> 59

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 59

Ser	Asn	Ser	Ser	Ile	Val	Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr
1				5					10					15	

Pro	Gly	Cys	Val
			20

<210> 60

<211> 19

<212> PRT

<213> Hepatitis C virus

<400> 60

His	Asp	Ala	Ile	Leu	His	Thr	Pro	Gly	Val	Pro	Cys	Val	Arg	Glu	Gly
1				5					10					15	

Asn	Val	Ser
-----	-----	-----

<210> 61

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 61

Cys	Val	Arg	Glu	Gly	Asn	Val	Ser	Arg	Cys	Trp	Val	Ala	Met	Thr	Pro
1				5					10					15	

Thr	Val	Ala	Thr
			20

<210> 62

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 62

Ala	Met	Thr	Pro	Thr	Val	Ala	Thr	Arg	Asp	Gly	Lys	Leu	Pro	Ala	Thr
1				5					10					15	

Gln	Leu	Arg	Arg
-----	-----	-----	-----

20

<210> 63

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 63

Leu	Pro	Ala	Thr	Gln	Leu	Arg	Arg	His	Ile	Asp	Leu	Leu	Val	Gly	Ser
1				5					10					15	

Ala	Thr	Leu	Cys
			20

<210> 64

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 64

Leu	Val	Gly	Ser	Ala	Thr	Leu	Cys	Ser	Ala	Leu	Tyr	Val	Gly	Asp	Leu
1				5					10					15	

Cys	Gly	Ser	Val
			20

<210> 65

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 65

Gln	Leu	Phe	Thr	Phe	Ser	Pro	Arg	Arg	His	Trp	Thr	Thr	Gln	Gly	Cys
1				5					10					15	

Asn	Cys	Ser	Ile
			20

<210> 66

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 66

Thr	Gln	Gly	Cys	Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	His
1				5					10					15	

Arg	Met	Ala	Trp
-----	-----	-----	-----

20

<210> 67

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 67

Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn	Trp	Ser	Pro
1				5					10					15	

Thr	Ala	Ala	Leu
			20

<210> 68

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 68

Asn	Trp	Ser	Pro	Thr	Ala	Ala	Leu	Val	Met	Ala	Gln	Leu	Leu	Arg	Ile
1				5					10					15	

Pro	Gln	Ala	Ile
			20

<210> 69

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 69

Leu	Leu	Arg	Ile	Pro	Gln	Ala	Ile	Leu	Asp	Met	Ile	Ala	Gly	Ala	His
1				5					10					15	

Trp	Gly	Val	Leu
			20

<210> 70

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 70

Ala	Gly	Ala	His	Trp	Gly	Val	Leu	Ala	Gly	Ile	Ala	Tyr	Phe	Ser	Met
1				5					10					15	

Val	Gly	Asn	Met
-----	-----	-----	-----

20

<210> 71

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 71

Val	Val	Leu	Leu	Leu	Phe	Ala	Gly	Val	Asp	Ala	Glu	Thr	Ile	Val	Ser
1				5					10					15	
Gly Gly Gln Ala															
20															

<210> 72

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 72

Ser	Gly	Leu	Val	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Lys	Gln	Asn	Ile	Gln
1				5					10					15	
Leu Ile Asn Thr															
20															

<210> 73

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 73

Gln	Asn	Ile	Gln	Leu	Ile	Asn	Thr	Asn	Gly	Gln	Trp	His	Ile	Asn	Ser
1				5					10					15	
Thr Ala Leu Asn															
20															

<210> 74

<211> 21

<212> PRT

<213> Hepatitis C virus

<400> 74

Leu	Asn	Cys	Asn	Glu	Ser	Leu	Asn	Thr	Gly	Trp	Trp	Leu	Ala	Gly	Leu
1				5					10					15	

Ile Tyr Gln His Lys
20

<210> 75

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 75

Ala Gly Leu Ile Tyr Gln His Lys Phe Asn Ser Ser Gly Cys Pro Glu
1 5 10 15

Arg Leu Ala Ser
20

<210> 76

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 76

Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Pro Leu Thr Asp Phe Asp
1 5 10 15

Gln Gly Trp Gly
20

<210> 77

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 77

Thr Asp Phe Asp Gln Gly Trp Gly Pro Ile Ser Tyr Ala Asn Gly Ser
1 5 10 15

Gly Pro Asp Gln
20

<210> 78

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 78

Ala Asn Gly Ser Gly Pro Asp Gln Arg Pro Tyr Cys Trp His Tyr Pro
1 5 10 15

Pro Lys Pro Cys
20

<210> 79

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 79

Trp His Tyr Pro Pro Lys Pro Cys Gly Ile Val Pro Ala Lys Ser Val
1 5 10 15

Cys Gly Pro Val
20

<210> 80

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 80

Ala Lys Ser Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val
1 5 10 15

Val Val Gly Thr
20

<210> 81

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 81

Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr
1 5 10 15

Tyr Ser Trp Gly
20

<210> 82

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 82

Gly Ala Pro Thr Tyr Ser Trp Gly Glu Asn Asp Thr Asp Val Phe Val
1 5 10 15

Leu Asn Asn Thr
20

<210> 83

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 83

Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Ser Thr Gly Phe Thr Lys
1 5 10 15

Val Cys Gly Ala
20

<210> 84

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 84

Gly Phe Thr Lys Val Cys Gly Ala Pro Pro Val Cys Ile Gly Gly Ala
1 5 10 15

Gly Asn Asn Thr
20

<210> 85

<211> 19

<212> PRT

<213> Hepatitis C virus

<400> 85

Ile Gly Gly Ala Gly Asn Asn Thr Leu His Cys Pro Thr Asp Cys Arg
1 5 10 15

Lys His Pro

<210> 86

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 86

Thr Asp Cys Phe Arg Lys His Pro Asp Ala Thr Tyr Ser Arg Cys Gly
1 5 10 15

Thr Pro Gly Glu
20

<210> 91

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 91

Ala	Cys	Asn	Trp	Thr	Pro	Gly	Glu	Arg	Cys	Asp	Leu	Glu	Asp	Arg	Asp
1				5					10					15	

Arg Ser Glu Leu
20

<210> 92

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 92

Glu	Asp	Arg	Asp	Arg	Ser	Glu	Leu	Ser	Pro	Leu	Leu	Leu	Thr	Thr	Thr
1				5					10					15	

Gln Trp Gln Val
20

<210> 93

<211> 9
<212> PRT
<213> Hepatitis C virus

<400> 93

Tyr	Gln	Val	Arg	Asn	Ser	Thr	Gly	Leu
1				5				

<210> 94

<211> 29
<212> DNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<223>/note="antisense"

<400> 94

acgtccgtac gttcgaatta attaatcga

<210> 95

<211> 60

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 95

cctccggacg tgcactagct cccgtctgtg gtagtggtgg tagtgattat caattaattg 60

<210> 96

<211> 19

<212> DNA

<213> Hepatitis C virus

<400> 96

gtttaaccac tgcattgatg 19

<210> 97

<211> 20

<212> DNA

<213> Hepatitis C virus

<400> 97

gtcccatcga gtgcggctac 20

<210> 98

<211> 45

<212> DNA

<213> Hepatitis C virus

<400> 98

cgtgacatgg tacattccgg acacttggcg cacttcataa gcgga 45

<210> 99

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 99

tgccatcatc acaatggagc tctgggacga gtcgttcgtg ac 42

<210> 100

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 100

taccagcag cgggagctct gttgctccg aacgcagggc ac

42

<210> 101

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 101

tgctcgtggtg gggacggagg cctgcctagc tgcgagcgtg gg

42

<210> 102

<211> 48

<212> DNA

<213> Hepatitis C virus

<400> 102

cggtatgtgg cccgggtaga ttgagcactg gcagtcctgc accgtctc

48

<210> 103

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 103

cagggccgtt ctaggcctcc actgcatcat catatcccaa gc

42

<210> 104

<211> 26

<212> DNA

<213> Hepatitis C virus

<400> 104

ccggaatgta ccatgtcacg aacgac

26

<210> 105

<211> 24

<212> DNA

<213> Hepatitis C virus

<400> 105

gctccattgt gtatgaggca gcgg

24

<210> 106

<211> 23

<212> DNA

<213> Hepatitis C virus

<400> 106

gagctcccgc tgctgggtag cgc

23

<210> 107

<211> 25

<212> DNA

<213> Hepatitis C virus

<400> 107

cctccgtccc caccacgaca atacg

25

<210> 108

<211> 27

<212> DNA

<213> Hepatitis C virus

<400> 108

ctacccgggc cacataacgg gtcaccg

27

<210> 109

<211> 24

<212> DNA

<213> Hepatitis C virus

<400> 109

ggaggcctac aacggccctg gtgg

24

<210> 110

<211> 22

<212> DNA

<213> Hepatitis C virus

<400> 110

ttctatcgat taaatagaat tc

22

<213> Hepatitis C virus

gccatacgct cacagccgat ccc

23

<213> Hepatitis C virus

<400> 112

Ser Asn Ser Ser
20

<213> Hepatitis C virus

<400> 113

Met Ile Met His Thr
20

<213> Hepatitis C virus

<400> 114

Arg Glu Asn Asn Ser
20

<213> Hepatitis C virus



<400> 115

Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu
1 5 10 15

Thr Pro Thr Leu Ala
20

<210> 116

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 116

Val Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro
1 5 10 15

Thr Thr Thr Ile Arg
20

<210> 117

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 117

Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu Leu Val
1 5 10 15

Gly Ala Ala Ala Phe
20

<210> 118

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 118

Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly
1 5 10 15

Asp Leu Cys Gly Ser
20

<210> 119

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 119

Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu
1 5 10 15

Phe Thr Ile Ser Pro
20

<210> 120

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 120

Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln
1 5 10 15

Asp Cys Asn Cys Ser
20

<210> 121

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 121

Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr
1 5 10 15

Gly His Arg Met Ala
20

<210> 122

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 122

His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
1 5 10 15
Ser Pro Thr Thr Ala
20